Request for Comments: 652

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Online file: /ISI/<DCROCKER>NAOCRD.TXT

Telnet Output Carriage-Return Disposition Option

1. Command name and code

NAOCRD 10 (Negotiate About Output Carriage-Return Disposition)

2. Command meanings

In the following, we are discussing a simplex connection, as described in the NAOL and NAOP Telnet options.

IAC DO NAOCRD
The data sender requests or agrees to negotiate about output carriage-return character disposition with the data receiver. In the case where agreement has been reached and in the absence of further subnegotiations, the data receiver is assumed to be handling output carriage-returns.

IAC DON'T NAOCRD
The data sender refuses to negotiate about output carriage-return disposition with the data receiver, or demands a return to the unnegotiated default mode.

IAC WILL NAOCRD
The data receiver requests or agrees to negotiate about output carriage-return disposition with the sender. In the case where agreement has been reached and in the absence of further subnegotiations, the data receiver alone is assumed to be handling output carriage-returns.

IAC WON'T NAOCRD
The data receiver refuses to negotiate about output carriage-return disposition, or demands a return to the unnegotiated default mode.

IAC SB NAOCRD DS <8-bit value> IAC SE
The data sender specifies, with the 8-bit value, which party should handle carriage-returns and what their disposition should be. The code for DS is 1.

IAC SB NAOCRD DR <8-bit value> IAC SE The data receiver specifies, with the 8-bit value, which party should handle carriage-returns and what their disposition should be. The code for DR is 0.

3. Default

DON'T NAOCRD/WON'T NAOCRD. In the default absence of negotiations concerning which party, data sender or data receiver, is handling output carriage-returns, neither party is required to handle carriage-returns and neither party is prohibited from handling them; but it is appropriate if at least the data receiver handles carriage-returns, albeit primitively.

4. Motivation for the Option

Please refer to section 4 of the NAOL and of the NAOP Telnet option descriptions.

5. Description of the Option

The data sender and the data receiver use the 8-bit value along with the NAOCRD SB commands as follows:

8-bit value	Meaning
0	Command sender suggests that he alone will handle carriage-returns, for the connection.
1 to 250	Command sender suggests that the other party alone should handle carriage-returns, but suggests that a delay of the indicated value be used. The value is the number of character-times to wait or number of NULs to insert in the data stream before sending the next data character. (See qualification, below.)
251	Not allowed, in order to be compatible with related Telnet options.
252	Command sender suggests that the other party alone handle carriage-returns, but suggests that they be discarded.
253	Not allowed, in order to be compatible with related Telnet options.

254 Command sender suggests that the other party alone should handle carriage-returns but suggests waiting for a character to be transmitted (on the other simplex connection) before sending more data. (See qualification, below.) Note that, due to the assynchrony of the two simplex connections, phase problems can occur with this option.

255 Command sender suggests tnat the other party alone should handle carriage-returns and suggests nothing about how it should be done.

The guiding rules are that:

(1) if neither data receiver nor data sender wants to handle carriage-returns, the data receiver must do it, and

(2) if both data receiver and data sender want to handle carriage-returns, the data sender gets to do it.

The reasoning for the former rule is that if neither wants to do it, then the default in the NAOCRD option dominates. If both want to do it, the sender, who is presumed to have special knowledge about the data, should be allowed to do it, taking into account any suggestions the receiver may make.

Note that carriage-return delays, controlled by the data sender, must consist of NUL characters inserted immediately after the character in question. This is necessary due to the assynchrony of network transmissions. Due to the Telnet end-of-line convention, with carriage-returns followed by a linefeed, any NULs that would otherwise be placed after the carriage-return must be placed after the linefeed, regardless of any modifications that may additionally be made to the line feed (see NAOLFD Telnet option).

As with all option negotiations, neither party should suggest a state already in effect except to refuse to negotiate; changes should be acknowledged; and once refused, an option should not be resuggested until "something changes" (e.g., another process starts).

At any time, either party can disable further negotiation by giving the appropriate WON'T NAOCRD or DON'T NAOCRD command.